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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,725	03/18/2004	Hanan Keren	27541	5029

7590 05/11/2005

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EXAMINER

NGUYEN, HOANG V

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/802,725

Applicant(s)

KEREN, HANAN

Examiner

Hoang V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 is/are allowed.
- 6) ☒ Claim(s) 18-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Leisten et al (US 6,690,336 B1).

Regarding claim 18, Leisten (Figure 1, col 4 line 52 to col 6 line 24) discloses a balanced antenna assembly comprising a dielectric core 12; an electrically conductive wire 18 extending axially through the core; and an electrically conductive helix 10A extending around the outer surface of the core; one end of the electrically conductive wire and one end of the electrically conductive helix being electrically connected together; the opposite ends of the electrically conductive wire and the electrically conductive helix constituting common feed terminals such as to provide a two-terminal balanced antenna assembly.

Regarding claim 19, as applied to claim 18, Figure 1 of Leisten shows that the dielectric core is of a cylindrical configuration.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leisten et al in view of Toncich et al (US 6,833,820 B2).

Leisten discloses a balanced antenna assembly comprising a dielectric core; an electrically conductive wire extending axially through the core; and an electrically conductive helix extending around the outer surface of the core; one end of the electrically conductive wire and one end of the electrically conductive helix being electrically connected together; the opposite ends of the electrically conductive wire and the electrically conductive helix constituting common feed terminals. Leisten fails to explicitly mention that the dielectric core is selected from the group of aluminum oxide, aluminum nitride, silicon nitride, zirconium oxide, and a ferroelectric dielectric. Toncich teaches a tunable antenna comprising a core made from ferroelectric material (abstract). It would have been obvious to one of ordinary skill in the art to employ the Leisten antenna with the core made from a ferroelectric material, as taught by Toncich, doing so would enable the modification of the resonant frequency of the Leisten antenna to a desired operating frequency.

***Allowable Subject Matter***

5. Claims 1-20 are allowed.

6. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, Moser (US 4,287,603) discloses an antenna assembly comprising a dielectric core; a two-terminal balanced antenna assembly including an electrical conductor on the dielectric core. Moser, however, fails to further teach that the electric conductor being configured and dimensioned to be matched to the operating frequency band of the cellular phone

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communication band and terminating at each of its opposite ends in a common feed point connection such as to provide a two-terminal balanced antenna assembly having an isotropic radiation pattern and reduced electromagnetic field radiation.

Claims 2-11 are allowed for depending on claim 1.

Regarding claim 12, Moser discloses a two-terminal balanced antenna assembly comprising a conductor disposed on a dielectric core. Moser, however, fails to further teach the configuration having a first electrically conductive loop in a first plane; a second electrically conductive loop in a second plane orthogonal to the first plane; the first and second electrically conductive loops being connected in series with a common feed point connection.

Claim 13 is allowed for depending on claim 12.

Regarding claim 14, Moser discloses a two-terminal balanced antenna assembly comprising a conductor disposed on a dielectric core. Moser, however, fails to further teach the configuration having a first electrically conductive loop constituted of two half-loops both disposed in a first plane; and a second electrically conductive loop disposed in a second plane orthogonal to the first plane and located between the two half-loops; the first and second electrically conductive loops being connected together in series with a common feed point.

Claims 15-17 are allowed for depending on claim 14.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Patent 4,287,603 discloses a two-terminal balanced antenna assembly.
- Patents 6,538,616 B1 and 6,873,302 B1 disclose an antenna comprising conductors wound around a dielectric cubic core.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V. Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoang Nguyen can be reached on (571) 272-1825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hvn  
5/6/05



HOANG V. NGUYEN  
PRIMARY EXAMINER